abcam

ab11710

Anti-ErbB2 / HER2 antibody [ICR12]

Recombinant

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	ICR12
Purification technique	Ion exchange chromatography
Light chain type	kappa
Concentration	1.004 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/400
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information ERBB2

Function Protein tyrosine kinase that is part of several cell surface receptor complexes, but that apparently needs a coreceptor for ligand binding. Essential component of a neuregulin-receptor complex, although neuregulins do not interact with it alone. GP30 is a potential ligand for this receptor. Regulates outgrowth and stabilization of peripheral microtubules (MTs). Upon ERBB2 activation, the MEMO1-RHOA-DIAPH1 signaling pathway elicits the phosphorylation and thus the inhibition of GSK3B at cell membrane. This prevents the phosphorylation of APC and CLASP2, allowing its association with the cell membrane. In turn, membrane-bound APC allows the localization of MACF1 to the cell membrane, which is required for microtubule capture and stabilization. In the nucleus is involved in transcriptional regulation. Associates with the 5'-TCAAATTC-3' sequence in the PTGS2/COX-2 promoter and activates its transcription. Implicated in transcriptional activation of CDKN1A; the function involves STAT3 and SRC. Involved in the transcription of rRNA genes by RNA Pol I and enhances protein synthesis and cell growth.

Storage

Shipped at conditions Blue Ice

Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The ErbB2 also known as HER2 or HER2 protein is a transmembrane receptor protein with a molecular weight of about 185 kDa. It serves as part of the epidermal growth factor receptor (EGFR) family of receptor tyrosine kinases. The ErbB2 protein is expressed mainly in epithelial tissues including those of the breast and the gastrointestinal tract. It lacks a known ligand-binding domain which sets it apart from other members of its family. Due to its structure ErbB2 dimerizes with other members of the EGFR family to exert its effects in cellular signaling.
Biological function summary	The role of ErbB2 extends beyond a singular function. It becomes an active component when forming heterodimers with other EGFR family members such as ErbB3 to initiate various downstream signaling cascades. The dimerization activates intracellular pathways leading to cell proliferation survival differentiation and migration. Within cells ErbB2 influences processes critical for normal development and tissue homeostasis contributing significantly to signal transduction networks.

Pathways	ErbB2 plays a pivotal role in pathways such as the PI3K/Akt and MAPK/ERK pathways. These pathways are important in mediating cellular responses to growth signals. The PI3K/Akt pathway activated by HER2 signaling regulates cell growth and survival while the MAPK/ERK pathway contributes to cell differentiation and proliferation. ErbB2's interaction with proteins like ErbB3 is fundamental in these pathways increasing the amplitude and diversity of downstream signals.
Associated diseases and disorders	ErbB2 is significantly associated with breast cancer and gastric cancer. The overexpression or gene amplification of HER2 is observed in approximately 20% of breast cancer cases correlating with aggressive tumor growth and poor prognosis. ErbB2-related signaling contributes to oncogenic processes by promoting excessive cell proliferation. Targeting ErbB2 in these cancers is common using therapies such as monoclonal antibodies like trastuzumab. In the context of gastric cancer the role of ErbB2 mirrors its function in breast cancer and targeting HER2 holds therapeutic potential.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

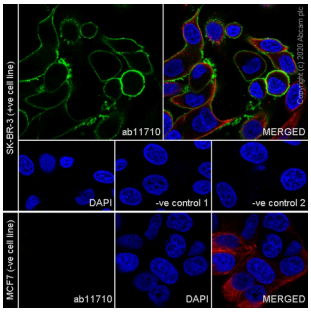
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

4 product images



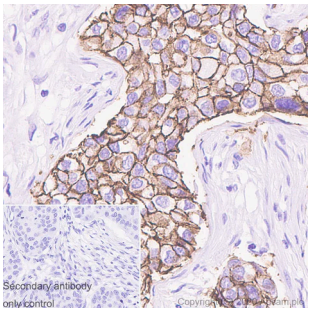
Immunocytochemistry/ Immunofluorescence - Anti-ErbB2 / HER2 antibody [ICR12] (ab11710)

ErbB2 / HER2 Immunocytochemistry/ Immunofluorescence staining using rat Anti-ErbB2 / HER2 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized SK-BR-3 cells labelling ErbB 2 with ab11710 at 1/100 dilution, followed by ab150157 Goat Anti-rat IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing strong membranous staining in SK-BR-3 cells. ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution, followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/1000 diliution (Red). The nuclear counterstain was DAPI (Blue).
Negative control 1: ab11710 at 1/100 dilution followed by ab150080 at a 1/1000 dilution.

Negative control 2: ab179513 at a 1/200 dilution followed by ab150157 at a 1/1000 dilution.

Negative control cells: MCF7 (PMID: 18288420).

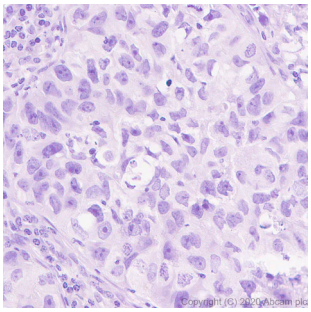


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [ICR12] (ab11710)

ErbB2 / HER2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-ErbB2 / HER2 antibody

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue labeling ErbB2 / HER2 with ab11710 at 1/400 dilution followed by ready to use Goat Anti-rat IgG H&L (HRP polymer) (ab214882). Membranous staining on human breast carcinoma. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is ready to use Goat Anti-rat IgG H&L (HRP polymer) (ab214882).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

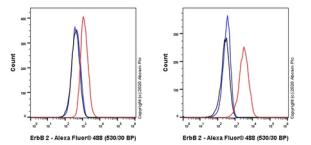


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [ICR12] (ab11710)

ErbB2 / HER2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-ErbB2 / HER2 antibody

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue labeling ErbB 2 with ab11710 at 1/400 dilution followed by ready to use Goat Anti-rat IgG H&L (HRP polymer) (ab214882). No staining on human breast carcinoma without expression of HER2 is observed. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is ready to use Goat Anti-rat IgG H&L (HRP polymer) (ab214882).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Flow Cytometry - Anti-ErbB2 / HER2 antibody [ICR12] (ab11710)

ErbB2 / HER2 Flow Cytometry staining using rat Anti-ErbB2 / HER2 antibody

Flow cytometric analysis of MCF7 (human breast adenocarcinoma epithelial cell, Left panel) / SK-BR-3 (human breast adenocarcinoma epithelial cell, Right panel) cells labelling ErbB 2 with ab11710 at 1/1000 dilution (0.1µg) (Red) compared with a rat monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rat IgG (Alexa Fluor® 488, ab150157) at 1/2000 dilution was used as the secondary antibody.
Low expression control: MCF7 (PMID: 17938260).

Gated on viable cells.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.